storing means for selectively storing the image data obtained from the obtaining means during a time period in which the cross section of the examining body is scanned with the ultrasound of the second power; and

the motion image displayed by said displaying means being an image of ultrasonic shadowing agent flow as produced by the first power ultrasound, with the displayed motion image being reset by breaking of the implanted bubbles of the shadow agent upon application of ultrasound of the second power.

14. (Amended) An ultrasound diagnostic apparatus comprising:

scanning means for repeatedly scanning a cross section of an examining human body having implanted bubbles as an ultrasonic shadowing agent with an ultrasound to repeat an echo signal;

image obtaining means for repeatedly obtaining image data based on said echo signal;

displaying means for displaying said generated image data as a motion image;

changing means for repeatedly changing a frequency of said ultrasound from a first frequency to a second frequency and from the second frequency to the first frequency; [and]

storing means for selectively storing the image data obtained from the obtaining means during a time period in which the cross section of the examining human being is scanned with the ultrasound of the second frequency; and

the motion image displayed by said displaying means being an image of ultrasonic shadowing agent flow as produced by the first frequency ultrasound, with the displayed motion image being reset by breaking of the implanted bubbles of the shadow agent upon application of ultrasound of the second frequency.

24. (Amended) An ultrasound imaging method, which repeatedly scans a cross section of an examining human body having implanted bubbles as an ultrasonic shadowing agent with an ultrasound to obtain an echo signal, repeatedly obtains image data based on said echo signal, and displays said image data as a motion image, comprising:

a first step of scanning said ultrasound by first power;

a second step of scanning said ultrasound by second power stronger than said first power after scanning said ultrasound by said first power; [and]

a third step of selectively storing the image data obtained during a time period in which the cross section of the examining human body is scanned with the ultrasound of the second power; and

a fourth step of displaying a motion image of the ultrasonic shadowing agent flow produced by the first power ultrasound, with the displayed motion image being reset by breaking of the implanted bubbles of the shadow agent upon application of ultrasound of the second power.

29. (Amended) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit ultrasound to a human body having implanted bubbles and to receive an echo signal corresponding to an ultrasound echo from the human body;

a transmission mechanism configured to apply a first drive signal and then a second drive signal successively to said transducer, said first drive signal having a first characteristic resulting in said transducer generating a respective first echo signal representative of a first quality image and said second drive signal having a second characteristic resulting in said

transducer generating a respective second echo signal representative of a second quality image higher than the first quality; and

a processor configured to generate first and second display image data corresponding to said first and second quality images; and

a display configured to display a motion image of implanted bubbles as produced by application of the firsts drive signal, with the displayed motion image being reset by breaking of the implanted bubbles upon application of the second drive signal.

44. (Amended) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit in response to a drive pulse an ultrasound signal to a human body having implanted bubbles and to generate an echo signal corresponding to an ultrasound echo from the human body;

a transmission mechanism configured to apply to said transducer repeatedly a series of first drive pulses to cause said transducer to transmit corresponding ultrasound signals to break the bubbles, wherein the first drive pulses transmission is started by a trigger signal and ended a first time period after the trigger signal;

a processor configured to generate data of plural images based on echo signals generated by said transducer in response to the series of said first drive pulses and to generate a subfraction image by subtracting between the data of plural images.

50. (Amended) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit in response to a drive signal an ultrasound signal to a region of a human body having implanted bubbles and to generate an echo signal corresponding to an ultrasound echo from the human body;

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a transmit driver coupled to the transducer and configured to apply to said transducer a sequence of said drive signals having a sufficiently low first power during a first time period so that said transducer transmits said ultrasound signal at a first power level during said first time period to allow a substantial number of bubbles to remain in said region of said human body during said first time period and a second power during a second time period so that during said second time period said transducer transmits said ultrasound signal at a second power level to break substantially all the bubbles in said region of said human; and

a display configured to display a motion image of the implanted bubbles flow produced by said drive signals having a sufficiently low first power, with the displayed motion image being reset by breaking of the implanted bubbles of the shadow agent upon application of ultrasound of the second power level.

51. (Amended) An ultrasonic diagnostic apparatus comprising:

a transducer configured to transmit in response to a drive pulse an ultrasound signal to a region of a human body having implanted bubbles and to generate an echo signal corresponding to an ultrasound echo from the human body; and

a transmission mechanism configured to apply to the transducer plural drive pulses at a first power followed by plural drive pulses of a second power greater than the first power, said transmission mechanism repeatedly changing application of said drive pulses between the first power and the second power; and

a processor configured to generate time density curve data corresponding to time variation of luminance value of at least one image pixel based on echo signals generated by said transducer in plural periods during application of said drive signals of said first power.

54. (Amended) An ultrasonic diagnostic apparatus comprising:

an ultrasound probe configured to generate an ultrasound signal for application to a region of a human body having implanted bubbles therein in response to a drive signal and to generate an echo signal in response to reflection of said ultrasound signal by said human body;

a drive signal generator coupled to the probe and configured to generate and apply to the probe the drive signal, said drive signal having a selected power which is changeable between a first power and a second power greater than said first power;

an image processor coupled to said probe to generate image data based on echo signals generated by said probe in response to reflections of ultrasound signals generated by said drive signal in correspondence with the drive signal having said first and second powers, said image processor comprising a memory configured to store the image data generated in relation to ultrasound signals generated when said drive signal has said second power; and

a display coupled to the image processor and configured to display a motion image corresponding to the generated image data during application of ultrasound signals of said second power, with the displayed motion image being reset by breaking of the implanted bubbles of the implanted bubbles upon application of ultrasound of the second power.

55. (Amended) An ultrasound diagnostic apparatus comprising:

a probe configured to generate an ultrasound for application to a region of a human body having implanted bubbles therein in response to a drive signal and to repeatedly scan said region to detect an echo signal;

a driver coupled to the probe and configured to apply the drive signal to the probe;

a frequency selector coupled to the driver for providing a frequency select signal to change the frequency of the drive signal from a first frequency to a second frequency;

an image processor coupled to said probe and configured to generate image data in response to said detected echo signal; and

a memory coupled to the image processor and selectively storing the image data during a time period in which the cross section of the examining human being is scanned with the ultrasound generated upon application to the probe of the drive signal having the second frequency; and

a display coupled to the image processor and configured to display the image data generated upon application of the drive signal of the first frequency as a motion image, with the displayed motion image being reset by breaking of the implanted bubbles of the implanted bubbles upon application of ultrasound produced by the drive signal of the second frequency.

60. (Amended) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit ultrasound to a human body having implanted bubbles, and to generating an echo signal corresponding to an ultrasound echo from the human body;

means for applying a first drive signal and then a second drive signal successively to said transducer, said first drive signal resulting in said transducer generating a respective first echo signal representative of a first quality image and said second drive signal resulting in said transducer generating a respective second echo signal representative of a second quality image higher that the first quality; and

a processor configured to generate first and second display image data corresponding to said first and second quality images, the first image data being representative of a motion image produced during application of said first drive signal, said motion image being reset by breaking of bubbles by ultrasound produced by application of the second drive signal.

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61. (Amended) An ultrasound diagnostic apparatus for examining a region of a human body having an implanted bubbles, comprising:

a transducer configured to transmit an ultrasound signal to said region of said human body in response to a first drive signal and to generate an echo signal in response to an ultrasound echo from said region of said human body;

means for applying to said transducer a series of pulses as said first drive signal during a first variable time interval in which implanted bubbles flow into said region of said human body, said drive pulses causing said transducer to transmit the ultrasound signal with a power level sufficient to break at least some but substantially less than all of the bubbles in said region of said human body, said means for applying having an input configured to receive a trigger signal so that transmission of first drive pulses is started by the trigger signal and ended a first time period after the trigger signal, the trigger signal being produced manually or in response to an electro-cardiographic wave; and

a processor coupled to said transducer and configured to generate display image data based on echo signals produced by said transducer in response to application of said series of said first drive signals to said transducer and to generate a subtraction image by subtracting between the data of plural images.

a 13   63. (Amended) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit in response to a drive pulse an ultrasound signal to a human body having implanted bubbles and to generate an echo signal corresponding to an ultrasound echo from the human body;

means for repeatedly applying to said transducer a series of first drive pulses to cause said transducer to transmit corresponding ultrasound signals to break the bubbles, wherein the first drive pulses transmission is started by a trigger signal and ended a first time period after the trigger signal, said means for repeatedly applying having an input configured to receive a trigger signal so that transmission of first drive pulses is started by the trigger signal and ended a first time period after the trigger signal, the trigger signal being produced manually or in response to an electro-cardiographic wave; and

a processor configured to generate data of plural images based on echo signals generated by said transducer in response to the series of said first drive pulses and to generate a subfraction image by subtracting between the data of plural images.

64. (Amended) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit in response to a drive signal an ultrasound signal to a region of a human body having implanted bubbles and to generate an echo signal corresponding to an ultrasound echo from the human body;

means for applying to said transducer a sequence of said drive signals having a sufficiently low first power during a first time period so that said transducer transmits said ultrasound signal at a first power level during said first time period to allow a substantial number of bubbles to remain in said region of said human body during said first time period and a second power during a second time period so that during said second time period said

transducer transmits said ultrasound signal at a second power level to break substantially all the bubbles in said region of said human; and

a processor which produces motion image data representative of motion of said implanted bubbles and in which the motion image is reset during the second time period.

65. (Amended) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit in a response to a drive pulse an ultrasound signal to a region of a human body having implanted bubbles and to generate an echo signal corresponding to an ultrasound echo from the human body;

means for applying to the transducer plural drive pulses at a first power followed by plural drive pulses of a second power greater than said firs power, said applying means repeatedly changing application of said drive pulses between the first power and the second power; and

a processor configured to generate time density curve data corresponding to time variation of luminance value of at least one image pixel based on echo signals generated by said transducer in plural periods during application of said drive signals of said first power.

66. (Amended) An ultrasonic diagnostic apparatus comprising:

an ultrasound probe configured to generate an ultrasound signal for application to a region of a human body having implanted bubbles therein in response to a drive signal and to generate an echo signal in response to reflection of said ultrasound signal by said human body;

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means for applying the drive signal to the probe, said drive signal having a selected

power which is changeable between a first power and a second power greater than said first

power;

an image processor coupled to said probe to generate image data based on echo

signals generated by said probe in response to reflections of ultrasound signals generated by

said drive signal in correspondence with the drive signal having said first and second powers,

said image processor comprising a memory configured to store the image data generated in

relation to ultrasound signals generated when said drive signal has said second power; and

a display coupled to the image processor and configured to display a motion image

corresponding to the generated image data upon application of a drive signal of said first

power, said motion image being reset upon application of a drive signal of said second

power.

Please add new Claims 69-70 as follows:

69. (New) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit in response to a drive pulse an ultrasound signal to

a human body having implanted bubbles and to generate an echo signal corresponding to an

ultrasound echo from the human body;

a transmission mechanism configured to apply to said transducer repeatedly a series

of first drive pulses to cause said transducer to transmit corresponding ultrasound signals to

break the bubbles;

said transmission mechanism having an input configured to receive a trigger signal so

that transmission of the first drive pulses transmission is started by the trigger signal and

ended a first time period after the trigger signal, the trigger signal being produced manually

or in response to an electro-cardiographic wave; and

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a processor configured to generate data of plural images based on echo signals generated by said transducer in response to the series of said first drive pulses.

70. (Amended) An ultrasound diagnostic apparatus comprising:

a transducer configured to transmit in response to a drive pulse an ultrasound signal to a human body having implanted bubbles and to generate an echo signal corresponding to an ultrasound echo from the human body;

means for applying to said transducer a series of drive pulses to cause said transducer to transmit ultrasound signals to break the bubbles during a first time period and to stop the applying of the drive pulses breaking the bubbles during a subsequent variable time period, said means for applying having an input configured to receive a trigger signal so that transmission of first drive pulses is started by the trigger signal and ended the first time period after the trigger signal, the trigger signal being produced manually or in response to an electro-cardiographic wave; and

a processor configured to generate data of plural images based on echo signals generated by said transducer during the first time period and to generate a subfraction image by subtracting between the data of plural images.

REMARKS

Favorable reconsideration of this application is respectfully requested..

Claims 1-45 and 47-70 are presently active in this reissue application; Claims 1, 14, 24, 27, 29, 44, 50, 51, 54, 55, 60-61 and 63-66 having been amended, Claim 46 canceled and Claims 69-70 added by way of the present amendment.

In the outstanding Official Action Claims 1-2, 4-7, 10, 12, 14-18, 21-29, 31-33, 38-39, 51, 53-55, 60-61, 64-66 were rejected under 35 USC §103(a) as being unpatentable over